



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Chad L. Cundiff

Attorney Docket No. H0001749

Serial No.: 09/976,614

Group Art Unit: 3661

Filing Date: October 11, 2001

Examiner: LOUIS-JACQUES, Jacques H.

Title: INSTRUMENT REFERENCE FLIGHT DISPLAY SYSTEM FOR HORIZON
REPRESENTATION OF DIRECTION TO NEXT WAYPOINT

RESPONSE TO OFFICE ACTION

TO THE COMMISSIONER OF PATENTS:

AMENDMENT AND RESPONSE

In the Claims:

What is claimed is:

RECEIVED

MAY 06 2004

GROUP 3600

1. (Thrice Amended.) A method for enhancing IMC flight aboard an aircraft, comprising the steps of: collecting navigation, airspeed, altitude, direction of flight, and attitude data from the aircraft; generating a primary flight display, the primary flight display being located on an instrument panel and configured to simultaneously indicate the altitude, attitude, and direction of flight, and as a function of the data to show a perspective view of earth ground and horizon that are substantially conformal with a VMC view from the aircraft; and generating at least one of a current or next waypoint symbol on the display.

2. (Original.) A method of claim 1, wherein the step of generating at least one of a current or next waypoint comprises the step of generating a first symbol at the horizon to indicate the current waypoint.


3. (Original.) A method of claim 2, wherein the step of generating at least one of a current or next waypoint comprises the step of generating a second symbol at the horizon to indicate the next current waypoint.

4. (Original.) A method of claim 1, further comprising the step of selecting a desired current waypoint, wherein the steps of generating comprise altering the perspective view to match the selected waypoint.

25315

CUSTOMER NUMBER

BLACK LOWE & GRAHAM^{PLC}


701 Fifth Avenue, Suite 4800
Seattle, Washington 98104
206 381 2200 • F: 206 381 2201

5. (Original.) A method of claim 4, wherein the step of selecting comprises electronically moving the symbol on the display.
6. (Original.) A method of claim 4, wherein the step of selecting comprises adjusting navigation settings aboard the aircraft to alter the data.
7. (Original.) A method of claim 1, further comprising generating one or more situation awareness symbols on the display.
8. (Original.) A method of claim 7, wherein the step of generating one or more situation awareness symbols comprises generating one or more of the following: an attitude symbol reflecting aircraft speed; an attitude symbol reflecting aircraft altitude; an attitude symbol reflecting aircraft pitch; and a compass symbol reflecting heading.
9. (Original.) A method of claim 7, wherein the step of generating one or more situation awareness symbols comprises generating one or more landmarks.
10. (Original.) A method of claim 9, wherein the step of generating one or more landmarks comprises generating an airstrip conformal with the earth ground perspective view.
11. (Original.) A method of claim 1, wherein the step of collecting navigation and attitude data from the aircraft comprises acquiring aircraft speed and altitude from air and attitude instruments of the aircraft.
12. (Original.) A method of claim 1, wherein the step of collecting at least one of navigation and attitude data from the aircraft comprises acquiring one or more of the following from navigation instruments of the aircraft: direction to next waypoint, last waypoint information, and left/right deviation.
13. (Thrice Amended.) A display system for IMC, comprising: an information collation unit for acquiring data from navigation, airspeed, altitude, direction of flight, and attitude instruments of an aircraft; and an image processing unit for (a) generating a primary flight display, the primary flight display being located on an instrument panel and configured to simultaneously indicate the altitude, attitude, and direction of flight, and as a function of the data to show a perspective view of earth ground and horizon that are substantially conformal with a VMC view from the aircraft and (b) generating at least one of a current or next waypoint symbol on the display.

14. (Original.) A display system of claim 13, the information collation unit acquiring aircraft speed and altitude from the air and attitude instruments of the aircraft.

15. (Original.) A display system of claim 13, the information collation unit acquiring information including direction to next waypoint and last waypoint direction from the navigation instruments of the aircraft.

16. (Original.) A display system of claim 13, further comprising a monitor for showing the display within the aircraft.

17. (Original.) A display system of claim 13, the image processing unit generating the current waypoint collocated with the horizon.

18. (Original.) A display system of claim 13, the image processing unit generating the next waypoint collocated with the horizon.

19. (Thrice Amended.) In an IMC navigation system within an aircraft, the improvement comprising an image processing unit for (a) collating navigation, airspeed, altitude, direction of flight, and attitude data from the system, (b) generating a primary flight display, the primary flight display being located on an instrument panel and configured to simultaneously indicate the altitude, attitude, and direction of flight, and as a function of the data to show a perspective view of earth ground and horizon that are substantially conformal with a VMC view from the aircraft, and (c) generating at least one of a current or next waypoint symbol on the display.

20. (Original.) In an IMC navigation system of claim 19, the further improvement wherein the image processing unit responds to one of user inputs or navigation controls to alter the symbol and view on the display.